Infosystems

America's Leading Information Systems Magazine for Management

April Volume 27 Number 4

features

16 **Publishers memo: Send in the clones**

36 **Editorial: Making information more productive**

40 **Micrographics 80: Usage continues upswing; DP dominates the operation**
The results of INFOSYSTEMS' tenth annual micrographics survey are announced.

48 **Micrographic salaries: Increases exceed guidelines**
The third annual micrographics user salary survey is presented.

52 **A pivotal role for computerized PBXs**
The lowly telephone switchboard is being readied as a major catalyst in the automated office.

60 **Manufacturing systems: Living up to expectations**
Automated manufacturing systems can provide information for the best use of human and machine resources.

68 **Preventive maintenance: Shortstopping computer problems**
Regular diagnostic checks of computer systems can prevent hasty calls to the service engineer.

72 **Warning: Computers may be hazardous to your health**
DP positions regularly make the top 10 list of most stressing jobs.

78 **NCC goes west: Anaheim awaits over 400 exhibitors**

83 **Datacomm directions: DEC closes in on networking goal**
This leading mini manufacturer has a plan to make networks more versatile and more practical.

86 **Perspective: The big, bright, scary new banner**
Marching under a new banner that calls for more productivity in the office.

88 **Users report:**

A parts center uses off-peak transmission lines to communicate with distributors throughout US and Canada.

New procedures for computer input provided more accuracy and discipline.

By turning to 3 X 4 in. minifiche, this bank realizes substantial savings.

Thanks to a new report writer, a manufacturer of construction materials now generates reports in 48 hours.

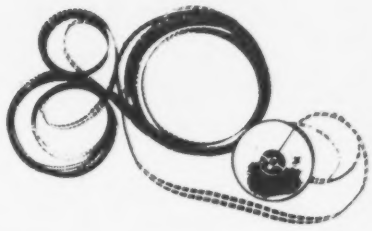
94 **Eliot Janeway: Transborder data flow to slow worldwide computer growth**

departments

114 **ad index**
110 **bookcase**
111 **classified**
36 **editorial**
6 **executive editor's notebook**
24 **inside info**
111 **literature info**
100 **new product info**
110 **newsmakers**
109 **plan ahead**
16 **publisher's memo**
6 **reader feedback**
96 **software info review**
20 **washington info**

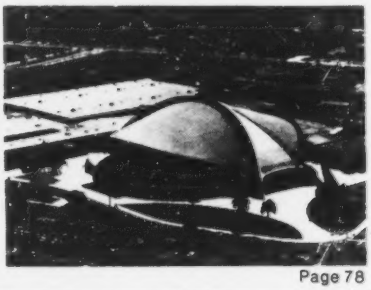
Cover
Design by Leonard Schimek, art director, and photography by Bud Marcom.

Coming in May
A special report on the available alternatives in terminals. Also a review of the products at NCC and staff updates on remote computing services, desk-top computers and leasing decisions.



Page 40

Page 60



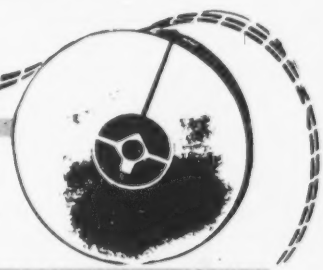
Page 78

INFOSYSTEMS (USPS 771-000) is published monthly. Copyright© 1980 Hitchcock Publishing Company, a subsidiary of American Broadcasting Companies Inc. All rights reserved. No part of this publication may be reproduced or transmitted by any means without permission from the publisher. One year subscription rates: $35.00 in the USA, Canada and Mexico. Single copy rate: $3.00 (USA, Canada, Mexico). For subscriptions outside the USA, Canada and Mexico, contact the Circulation Department. Printed in the USA. Controlled circulation postage paid at Waseca, MN. Postmaster: Return Form 3579 to INFOSYSTEMS, Hitchcock Publishing Company, Hitchcock Building, Wheaton, IL 60187.

ABP BPA

Micrographics Survey

80 Usage Continues Upswing; DP Dominates The Operation



Tenth annual survey indicates the continuing merger of micrographics into the data processing function. DP recommends equipment (45.2%), designs system (47.3%) and in charge of operation (47.0%).

by Arnold E. Keller
Editorial Director

Slowly, but surely, micrographics is becoming a part of the information systems scene. While its role is still a minor one and a world of indifference and skepticism remains to be conquered, there is progress to report. Nothing spectacular, but progress nevertheless. That's the finding of INFOSYSTEMS' tenth annual micrographics survey based on replies from 2,178 organizations, a 28.4 percentage of returns.

Some idea as to the potential for micrographics missionary work is indicated by the respondents reporting non-use, some 65 percent. Of those using micrographics (34.5 percent) almost half (47.4 percent) said they would increase usage during the coming months. This is up five percent over a year ago. Of the non-users, 34.1 percent indicated that they would be evaluating the potential use within the year while another 5.8 percent actually planned to install a micrographics system.

More to the point of missionary efforts: of the 1,426 non-using organizations, 1,344 reported no plans to install micrographics. Among the reasons given, "no need or application," led the list. Cost concern was also a factor, as was insufficient volume. In analyzing the reasons given for non-use, one gets the impression that many people still do not comprehend micrographics as a "working" systems tool. Over and over, the reason offered related to storage: "Our information storage requirements are minimal," "No need for mass storage of this type," "No requirements for forms storage." "Record retention is not a major problem.", "Our files are not large," etc.

Considering the fact that the majority of these replies are coming from organizations that are involved with information processing systems, it seems clear that the micrographics message is not as well understood as many

... continued on page 44

How Micrographics Needs Are Handled

	(Percentage)
All Handled By A Service Organization	30.3
All In-House	23.3
Most In-House	20.8
Equal Split Between In-House And By A Service Organization	13.3
Most At A Service Organization	12.3

Future Plans

Micrographics In-House Vs. Service Organization

	(Percentage)
Larger Share In-House	14.1
Larger Share From Service Organization	7.9
Little Or No Change	78.0

COM Usage

(Percentage)

Yes, In-House	20.4
Yes, Service Bureau	51.4
Plan To Within 2 Years	7.2
No	21.0

*Totals to more than 100.0 percent due to multiple responses.

Who Recommends The Equipment?

(Percentage)

DP Department	45.2
Office Services Staff	19.8
User Group	16.4
Systems Group	15.0
Records Manager	15.0
Micrographics	14.6
Other	14.4
Purchasing Department	10.7
Service Bureau	5.5
Consultant	3.5

*Totals to more than 100.0 percent due to multiple responses.

Who Approves Expenditures?

(Percentage)

President/VP/GM	34.2
Financial Management	34.2
DP Management	31.7
User Department	22.0
Other	9.8
Micrographics Department	9.3

*Totals to more than 100.0 percent due to multiple responses.

Who Is In Charge?

(Percentage)

DP Department	47.0
Office Services Staff	19.7
User Group	18.5
Records Manager	16.5
Other	15.6
Micrographics Department	11.5
Systems Group	6.7

*Totals to more than 100.0 percent due to multiple responses.

Who Designs The System(s)?

(Percentage)

DP Department	47.3
User Group	23.9
Systems Group	21.5
Office Services Staff	16.7
Records Manager	15.7
Micrographics Department	13.1
Other	11.3
Vendor	10.5
Service Bureau	8.7
Consultant	5.8
Engineering	4.4

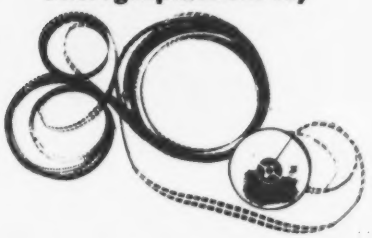
*Totals to more than 100.0 percent due to multiple responses.

Average Dollars Spent For Micrographics Per User Firm

Product	1976	1977	1978	1979	1980*
Film	$ 6,885	$ 7,140	$13,935	$16,541	$28,535
Equipment	9,100	5,613	33,202	35,683	32,237
Supplies	4,738	1,479	8,844	10,742	12,824
Services	8,780	10,467	13,482	19,748	28,870
Avg. Total	$32,138	$24,993	$37,648	$48,436	$66,209

*Estimated

Micrographics Survey



. . . continued

would think. A fact that recalls a comment made by one of last year's respondents, "Micrographics is a 50-year old infant."

But from the user's standpoint, one thing is clear. Micrographics is merging into the data processing function. And, as it has been said, "there are no mergers, only takeovers." The survey results certainly indicate a DP takeover.

In answer to "Who is in charge?," 47 percent said the DP department, compared to 38.8 percent for last year and a jump of 10 percent over 1977's survey. A similar increase was reported for "Who recommends equipment?," 45.2 percent favoring the DP department as opposed to 35 percent in 1979 and 32 percent back in 1977. The same for "Who designs the systems?": 47.3 percent indicating the DP department, compared to 43.6 percent in 1979, 42 percent in 1978 and 40.5 percent in 1977.

As to "Who approves expenditure?," the DP manager ranked third with 31.7 percent; topped only by the corporate management (34.2 percent) and financial management (34.2 percent).

The encouraging note in the increasing dominance of DP is that micrographics is "coming out of the closet" and starting to get the recognition as a systems tool that it rightfully deserves.

A key factor is the growing use of computer output microfilm (COM). Of the 739 respondents to the COM usage question, 20.4 percent were affirmative about in-house use, 51.4 percent indicated use of COM service bureaus and 7.2 percent said they planned to use it within two years. In 1978, in-house use was reported by 13.6 percent and rose to 16.9 percent in the 79 survey.

In answer to the question, "What improvements would you like to see in COM units?", a number of respondents

. . . continued on page 46

Major Usage Of Micrographics By Industry

	Storage	Active Or Daily Reference	Semi-Active Reference
Construction, Mining And Agriculture	14.3	64.3	21.4
Manufacturing	24.9	54.1	21.0
Transportation	21.4	64.3	14.3
Utilities/ Communications	36.8	47.4	15.8
Retail/ Wholesale	26.1	50.7	23.2
Banking/ Financial	20.5	56.8	22.7
Insurance	15.1	62.3	22.6
Service Organizations	25.3	45.8	28.9
DP Service Organizations	10.9	60.0	39.1
Consultants	33.3	22.2	44.4
Educational	26.1	39.1	34.8
Government/Military	20.0	56.8	23.2
Total	22.9	52.6	24.5

Types Of Outside Micrographics Services Used

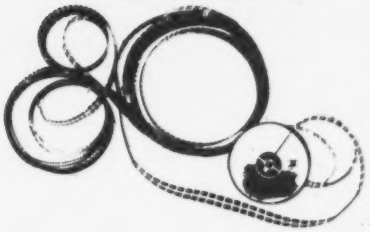
	(Percentage)
Mag-Tape-To-Film Conversion (COM)	74.4
Filming Documents	39.0
Processing Film	35.0
Duplicating Film	26.9
Storage	8.2
Film-To-Paper Conversion	4.0
Mag-Tape-To-Paper Conversion	2.2
*Totals to more than 100.0 percent due to multiple responses.	*

Use Of Computer-Assisted Retrieval (CAR) Systems

	(Percentage)
Presently Use	9.4
Plan To Use Within The Year	5.1
May Use In 2-5 Years	31.1
No Plan To Use	46.8
No Knowledge Of CAR	7.6

Type Of Computer-Assisted Retrieval (CAR) Used

	(Percentage)
Mainframe Controlled System	40.8
Stand-Alone Retrieval Unit	39.4
Others	19.7



... continued

listed the need for floppy disk and magnetic tape input. Others saw the need for CRT retrieval systems, microfilm output in addition to fiche, and improved design for readers, i.e., faster reference access, multifiche holders, etc.

There was virtually no change over the 1979 survey in regards to use of computer-assisted retrieval (CAR) systems. About 10 percent indicated present use with another five percent indicating use within the year. The future for CAR continues on the bright side, with 31 percent considering usage in the next two to five years. Among the users, the survey reported just about an even split between stand-alone retrieval (39.4 percent) and mainframe-controlled systems (40.8 percent). In reply to the question concerning improvements in CAR units, the majority wanted lower costs, better reliability, faster response time and better generalized software.

There was an increase in the number of respondents having a micrographics department, 28 percent as opposed to 21 percent in 1979. Of those in the affirmative, the number of employees in the department averaged from a low of three to a high of 12. The overall average number of employees was seven.

Dollar expenditures for film, equipment, supplies and services in 1979 averaged $46,436 per user firm, topping the $42,064 estimated for the year in last year's report. The increase in actual over estimated (23.3 percent) was reflected in all categories with the exception of equipment. The latter showed a drop from the estimated $32,949. The 1980 estimated total, $56,602 per user firm reflects an increase of 21.9 percent.

There was little change over last year in the use of micrographics relating to storage, active or daily reference or semiactive reference. The 1980 percentages for the 738 respondents indicating type of use were storage, 22.9 percent; active, 52.6 percent; and semiactive, 24.5 percent. Use of micrographics by industry again shows Banking/Financial the largest user category (79.6 percent) followed by Utilities/Communications (69.1 percent), Insurance (62.8 percent) and Government/Military (61.1 percent). □

Complete Report Available

Complete spiral-bound copies of the backup summary of the survey are available for $50. This shows a detailed breakdown, by industry, for each of the 21 questions asked on the survey.

Check or company purchase order must accompany all orders. Mail request to: INFOSYSTEMS Micrographics Survey, Research Department, Hitchcock Publishing Co., Hitchcock Building, Wheaton, IL 60187.

Usage Of Micrographics By Industry

Industry	(Percentage) Yes	No
Banking/Financial	79.6	20.4
Utilities/Communications	69.1	30.9
Insurance	62.8	37.2
Government/Military	61.1	38.9
Educational	44.7	55.3
Service Organizations	34.0	66.0
Manufacturing	30.3	69.7
Transportation	29.8	70.2
Retail/Wholesale	25.4	74.6
Construction, Mining And Agriculture	23.3	76.7
DP Service Organizations	14.7	85.3
Consultants	12.0	88.0
All Other	14.3	85.7

The Future According To NMA

The National Micrographics Association (NMA) has published the results of a market study, "Micrographics In The Office," conducted for NMA by the International Data Corp. Purpose of the study was to evaluate the use of micrographics in the "office of the future." The following chart excerpted from the 83-page report summarizes the findings on micrographics methods of use today and two years hence. For more information on the NMA report write in number 9 on the Reader Information Card.

	Today		Two Years From Now	
	Number Responses	Percent Total	Number Responses	Percent Total
Computer-Assisted Micrographics Retrieval	22	6	165	46
Word Processors Outputting To COM	19	5	127	36
Merging Text And Graphics On Micro	20	6	73	22
Filming Correspondence	144	40	184	52
Electronic Mail Outputting To COM	1	—	36	10
Computer Input Micro. (CIM)	11	3	42	12
Microfacsimile	—	—	29	7
Computer-Assisted Graphics On Micro	21	6	71	20

Micrographic Salaries

Increases Exceed Guidelines

The results of the third annual micrographics user salary survey indicate that increases from 1979 to 1980 far exceeded the presidential guidelines. The operations manager category (01) was among the highest with a national average increase of 21.2 percent. The average weekly salary was $423, as compared to $349 in 1979.

The survey was based on results taken from 418 returned questionnaires. Questionnaires were mailed to 3,506 user organizations. The respondents were asked to report salaries in effect on March 1, 1980.

The highest increase was reported for the laboratory technician (40). This position jumped from a national average weekly salary of $181 to $222 for an increase of 22.7 percent. Only one category, duplicating technician (43), did not show an increase in the national average. However, it did show an increase of 15.9 percent in actual median salary. This indicates that some low salaries tended to pull the average down, but the trend was on the upside. The 1980 survey confirms the results of the 1979 version that the camera operator tends to be the lowest paying position in a micrographic user organization. Last year the average weekly salary was $160, while this year it's $173. This is slightly higher than the production clerk, but the median is much higher for the clerk, $180 vs. $162, respectfully.

For a copy of the complete job descriptions, simply insert circle No. 6 on the Reader Information Card at the back of this issue.

Job Descriptions

Operations Manager, Micrographic Center (01). Plans, organizes and oversees all activities of the micrographic center through managing subordinates or by direct supervision.

Production or Laboratory Shift Supervisor (or leader), Micrographic Center (10). Responsible for the micrographic center's production operations on one shift.

COM Operator, Senior (30). Responsible for the complete operation of the COM equipment including job setup.

COM Operator, Junior (31). Operates the COM equipment under general supervision according to predetermined production schedules, quality standards, device capabilities and tape formatting requirements.

Micrographics Laboratory Technician (40). Fully experienced in basic wet process silver film technology.

Micrographics Processing Technician (41). Sets up, controls, adjusts and operates automated micrographic processors and duplicators, either one or both types.

Rotary/Planetary Camera Operator (42). Sets up, loads and operates a rotary or planetary camera for recording source documents on microfilm.

Micrographic Duplicating Technician (43). Operates one or more micrographic duplicators to produce roll-to-roll film, microfiche or aperture cards.

Micrographic Production Clerk (44). Receives, logs in, prepares and distributes documents to be microfilmed.

Weekly Salaries For All Micrographic Jobs: Nationwide

	Operations Manager, Micrographics Center	Prodn/Lab Shift Supv. (or Leader)	COM Operator, Senior	COM Operator, Junior	Micrographic Laboratory Technician	Micrographic Processing Technician	Rotary/Planetary Camera Operator	Micrographic Duplicating Technician	Micrographic Production Clerk
National Statistics	(01)	(10)	(30)	(31)	(40)	(41)	(42)	(43)	(44)
Number Reported	78	51	46	50	47	50	170	26	125
Lowest Reported Actual Salary	132	164	125	125	138	135	110	129	119
25th Percentile* Actual Salary	311	217	185	164	182	175	143	152	138
National Average Actual Salary	423	280	249	227	222	210	173	178	170
Median* Actual Salary	419	284	250	253	231	219	162	182	160
Mode* Actual Salary	523	300	260	253	231	220	154	188	180
75th Percentile* Actual Salary	526	351	310	280	240	220	195	189	188
Highest Reported Actual Salary	852	404	377	300	368	300	346	312	400
Established Salary Range Average Low	299	236	206	170	201	171	157	158	163
Established Salary Range Average High	423	339	287	236	271	235	214	210	217

*25th Percentile – That point at which 25 percent of all other salaries are lower and 75 percent are higher.
*Median – A figure having an equal number above and below.
*Mode – The salary reported most often.
*75th Percentile – That point at which 75 percent of all other salaries are lower and 25 percent are higher.